



THE PROGRAMME AGAINST AFRICAN TRYPANOSOMIASIS

**REPORT OF THE NINTH
PAAT ADVISORY GROUP CO-ORDINATORS MEETING**

PRETORIA, SOUTH AFRICA

24-25 SEPTEMBER 2003

Food and Agriculture Organization of the United Nations
Inter-African Bureau for Animal Resources of the African Union
International Atomic Energy Agency
World Health Organization of the United Nations

Acronyms

ADB	African Development Bank
AU	African Union
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
CIRDES	Centre International de Recherche-Développement sur l'Élevage en Zone Subhumide
COMESA	Common Market for Eastern and Southern Africa
CTVM	Centre for Tropical Veterinary Medicine
DALYs	Disability Adjusted Life Years
DNA	Deoxyribonucleic acid
DNDi	Drug for Neglected Disease initiative
EDF	European Development Fund
ECOWAS	Economic Community of West African States
ERGO	Environmental Research Group Oxford
FAO	Food and Agriculture Organization of the United Nations
FAO/IAEA	Joint FAO/IAEA Division of Nuclear Applications in Food and Agriculture
FP	Framework Programme
FITCA	Farming in Tsetse Control Areas of Eastern Africa
GIS	Geographic Information Systems
HAT	Human African Trypanosomiasis
IAEA	International Atomic Energy Agency
IBAR	Interafrican Bureau for Animal Resources
ICIPE	International Centre of Insect Physiology and Ecology
ICPTV	Integrated Control of Pathogenic Trypanosomes and their Vectors
IFAD	International Fund for Agricultural Development
IFAH	International Federation for Animal Health
ILRI	International Livestock Research Institute
INCO-DEV	International Cooperation with Developing Countries
INRA	Institut National de Recherche Agronomique
IPCN	FAO/IAEA Insect Pest Control Newsletter
ISCTRC	International Scientific Council for Trypanosomiasis Research and Control
ITC	International Trypanotolerance Centre
ITM	Institute of Tropical Medicine
KETRI	Kenya Trypanosomiasis Research Institute
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
OIE	Office International des Epizooties
PAAT	Programme against African Trypanosomiasis
PAG	PAAT Advisory Group Coordinators
PATTEC	Pan-African Tsetse and Trypanosomiasis Eradication Campaign
PROCORDEL	Programme de Recherche et Développement
PRSP	Poverty Reduction Strategy Paper
REC	Regional Economic Community
SARD	Sustainable Agricultural and Rural Development
SIT	Sterile Insect Technique

STEP	Southern Tsetse Eradication Project, SRV
SRV	Southern Rift Valley, Ethiopia
STREP	Strategic Targeted Research Programmes
TC	Technical Cooperation
T&T	Tsetse and Trypanosomiasis
UNFIP	United Nations Fund for International Partnership
WHA	World Health Assembly
WHO	World Health Organization
WHO/TDR	World Health Organization/Special Programme for Research and Training in Tropical Diseases

FOREWORD

The ninth PAAT Advisory Group (PAG) Coordinators' meeting was held at the George Bou Conference Centre, Pretoria, South Africa, 24-25 September, 2003. The meeting was organized by FAO Rome with assistance from the Directorate Animal Health, Department of Agriculture, Government of South Africa.

With Prof. Albert Ilemobade in the Chair, Prof. Raffaele Mattioli, on behalf of the Director of Animal Production and Health Division of FAO, welcomed the participants and thanked them for having honoured the invitation. He acknowledged the excellent composition of the panel in terms of the wide range of expert advice and expressed optimism that deliberations would lead to a meaningful outcome.

Prof. Ilemobade reminded the house that the meeting was unique because of the historical link to the first ISCTRC meeting which took place in Pretoria in 1949. He described the growing solidarity of the international community and tsetse and trypanosomiasis (T&T) endemic countries, over the last 54 years, to free the continent from poverty and hunger caused by T&T through the elimination of the disease as a tribute to pioneering efforts that date back over a 100 years. Prof. Ilemobade expressed thanks and appreciation to the inspirational leadership of Prof. Peter Holmes, former Chairman of PAAT; a leadership style he described as pragmatic and focused.

The Representative of the Government of South Africa, Dr Johan Van Wyk, welcomed members of the PAG to Pretoria. He commended the work of PAAT and the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC), and urged members to deliberate dispassionately on the problem of T&T within the context of NEPAD initiative and food security. He made a special appeal for the input of experienced workers in the search for sustainable strategies to control T&T. Dr Van Wyk urged members not to be dissuaded by the long-term nature of T&T control programmes. Strong reference was made to advocate sub-regional and regional co-operation in interventions; the example of the commendable success of South Africa in tsetse control which, in his view, was incomplete without the co-operation of Mozambique to control tsetse in Zululand but which is being actively pursued. Dr Van Wyk wished delegates a successful meeting and officially declared the meeting opened.

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**Report of the
9th PAAT Advisory Group (PAG) Co-ordinators Meeting
held 24-25 September 2003
in Pretoria, South Africa**

Conclusions and recommendations

- 1. Conclusion:** A key role of PAAT is to develop standardized normative procedures, protocols and survey methodologies, including standardized data collection and analysis.
Recommendation: Attempts to further develop a standardized method to quantify and map the economic benefits of T&T intervention should be pursued.
Action: PAAT.
- 2. Conclusion:** The PAG recognizes the major achievements over the past year of PAAT international agency members, and is grateful for their contribution to PAAT activities.
Recommendations: Regular updating and dissemination of PAAT and PAG achievements and agreed recommendations is required for example through PAAT website.
Action: FAO and PAAT.
- 3. Conclusion:** Ethiopian colleagues are congratulated for their formulation of the Concept Note and its progress towards submission. The Concept Note proposal is fully endorsed by the PAG.
Recommendation: The two PAAT - PATTEC priority areas, i.e. Southern Rift Valley of Ethiopia and the “cotton belt” transboundary zone of Burkina Faso – Mali are not exclusive. Countries are encouraged to propose further areas for T&T intervention to be evaluated against the agreed PAAT – PATTEC criteria. In particular, more attention should be paid to T&T issues in Central Africa.
Action: Tsetse infested countries.
- 4. Conclusion:** PAAT will continue to assist and advise PATTEC on T&T and related matters.
Recommendation: (i) Efforts to persuade countries to include T&T in their PRSP should continue. PATTEC should monitor the inclusion of T&T into national priorities and keep PAAT informed; (ii) PAAT should assist PATTEC and governments with evidence and advocacy material as they relate to the T&T problem and agricultural development.
Action: PAAT and PATTEC.
- 5. Conclusion:** The dual burden of poverty and disease should be emphasized to donors.
Recommendation: T&T activities should be conducted in the SARD context, considering a modular strategy, for spreading investment and benefits, which includes the agricultural, economic and social dimensions as exemplified in some FITCA activities.
Action: PAAT, PATTEC and tsetse affected countries.

- 6. Conclusion:** T&T problem is often of transboundary nature.
Recommendation: T&T activities should be conducted in a regional context, especially where barriers are to be maintained. Regional collaboration and coordination should be encouraged.
Action: PATTEC and tsetse affected countries.
- 7. Conclusion:** PAG continues to endorse ICPTV's activities and appreciates the participation of WHO/TDR representative.
Recommendation: (i) PAAT and ICPTV should explore novel ways of disseminating clear T&T research related information to all stakeholders; (ii) Collaboration between PAAT and ICPTV should be enhanced, as well as linkages with existing projects and areas of T&T activity; and (iii) PAAT should collaborate with WHO/TDR and will advise on generating proposals for research as appropriate.
Action: PAAT, ICPTV and WHO/TDR.
- 8. Conclusion:** Some areas are considered to be freed of tsetse and trypanosomiasis, but no standards are available to declare the disease and tsetse free status.
Recommendation: PAAT should assist partners in identifying a set of internationally agreed criteria to declare disease and tsetse fly free status, similar to the OIE pathway.
Action: PAAT.
- 9. Conclusion:** PAG appreciates the reported achievements of FITCA in Kenya.
Recommendation: PAAT should establish ways of evaluating new T&T intervention tools and of promoting their wider adoption where appropriate.
Action: PAAT and PAG.
- 10. Conclusion:** Sustainability of T&T interventions is a crucial issue.
Recommendation: Factors affecting T&T intervention sustainability should be urgently identified and assessed.
Action: PAG.
- 11. Conclusion:** In certain areas both sleeping sickness and animal trypanosomiasis constrain agricultural development and human welfare and Southern Chad is recognized as an area where the elimination of both human and animal diseases is possible.
Recommendation: Concerted actions driven by international agencies and institutions to combat both human and animal diseases, including case management and vector control, in collaboration with public and private sector should be promoted.
Action: FAO and WHO through PAAT.

1. Brief and discussion on the last PAG meeting report – A.A. Ilemobade

The report of the previous meeting held in Nairobi in September 2002 was discussed. Corrections in some aspects of the text of the report were made to clarify issues (e.g. ICPTV funding period phase 1 from 3 to 5 years; FITCA mid-term review resulted in a recommendation for a no-cost extension for one year). In addition, the meeting agreed that conclusions and recommendations should not be time bound or tied to a particular meeting as they are generic and have a long-term relevance.

The audience emphasized the need of standardization of data and data collection methodologies, and a more active involvement of FAO Liaison Officers.

With these observations, the house accepted the report as an accurate account of the 8th PAG meeting.

The participants agreed on the provisional agenda. However, some agenda items will be reported to the next PAG meeting, agreed to be held in Accra, Ghana.

2. Report of the PAAT Secretariat and FAO/PAAT activities – R.C. Mattioli

The audience was briefed on the outcome of the PAAT Programme Committee (PAAT-PC) meeting, held in WHO Headquarters, Geneva, November 2002. The meeting was attended by international organizations, representatives of donor agencies, NGOs and the private sector. Main conclusions and recommendations of the PAAT PC were:

- (i) T&T problem needs to be included in the national Poverty Reduction Strategy Papers;
- (ii) T&T problem is complex and there is a need to formulate integrated intervention packages tailored to local situations and cost-benefit scenarios;
- (iii) T&T affected countries need to objectively assess the impact of T&T and prioritize areas for national and regional intervention;
- (iv) High priority should be given to human resource development and rural services.

The PAAT PC meeting recognized the strategic role that trypanocidal treatments play in the control of the disease. The presence on African markets of counterfeit or poor quality trypanocides is an increasing and worrisome problem. In this regard, PAG members appreciated the FAO initiative to pursue, in partnership with the International Federation for Animal Health (IFAH), actions seeking to establish internationally and scientifically agreed standards and protocols for quality control/quality assurance of trypanocides and transfer proven methods and techniques to Africa.

The participants were informed about FAO and PAAT activities as relate to tsetse and trypanosomiasis since the 2002 PAG meeting. Two PAAT Technical and Scientific Series papers were published: a first paper focuses on the integration of the Sterile Insect Technique (SIT) in area-wide T&T intervention, while the other one deals with socio-economic and cultural factors in the research and control of the disease. Four additional papers are in press or in preparation. These papers deal with:

- (i) economic principles for strategic planning of tsetse control/eradication in West Africa;
- (ii) the role of trypanotolerant animals in T&T intervention programmes;
- (iii) options for long-term T&T management in West Africa; and
- (iv) the mapping of benefits of disease removal as a decision tool for T&T interventions.

The presenter further briefed the house on support by FAO and PAAT to PATTEC. A number of workshops were convened on different themes. Following the agreement reached at the PAAT-PATTEC harmonization workshop (FAO HQs, May 2002) upon priority areas deserving joint international action, a further workshop was convened in July 2003 at FAO HQs. This forum focused on development of field programme proposals in the Southern Rift Valley (SRV) of Ethiopia. Following the workshop, a concept note was prepared. A similar workshop is planned for the transboundary Burkina Faso-Mali “cotton-belt” zone end this year-beginning 2004.

Cooperation Programme (TCP) for the mobilization of resources in support of PATTEC. The main purpose of the TCP is to build national and regional capacity for T&T intervention schemes in PAAT-PATTEC agreed priority areas. The document proposal is being finalized following input from AU and AU-IBAR. Also, Geographic Information System (GIS) software (i.e. 54 copies of ArcView and Spatial Analysis) were distributed to 13 African countries, with a view to enhance national capabilities in data management, analysis and decision making for the formulation of field T&T management strategies.

Future FAO/PAAT activities will concentrate on the development of field programme proposals in the two PAAT-PATTEC agreed priority areas (Burkina Faso-Mali and the SRV of Ethiopia) and the advancement of PAAT-PATTEC harmonization process.

Expected outputs of the FAO/PAAT activities include the creation of a conducive and catalytic environment for the stakeholder community and donors for greater support to T&T interventions in the context of Sustainable Agriculture and Rural Development (SARD). Finally, the presenter announced the restructuring of the PAAT website (<http://www.fao.org/ag/paat.html>) and thanked the support of IFAD which will be soon made available to this activity.

The discussion which followed the presentation agreed to maintain the current definition of priority areas and other countries, besides Burkina Faso, Ethiopia and Mali, are encouraged to use the PAAT-PATTEC established criteria for screening further areas which may deserve international attention. Results of the screening process will be submitted to PAAT for eventual endorsement. However, countries are entirely autonomous to approach donors for support; PAAT endorsement is intended as a facilitating mechanism to help fundraising. Again, it was stressed the necessity to include T&T in the PRSPs and to thoroughly evaluate the impact of T&T on poverty and SARD.

Finally, the participants were informed of the appointment of Prof. Ilemobade as the new chairman of PAAT and Prof. Holmes as Senior Programme Advisor.

3. Report of AU/IBAR activities – J. Musiime

AU/IBAR has made substantial efforts to harmonize and collaborate with PATTEC, and continues to advocate support from national authorities.

Details for funding proposals under the current EU EDF9 framework were presented. Proposals should be presented through “Regional Economic Communities” (RECs), such as COMESA, East African Community and ECOWAS. AU could provide advice upon request and it was agreed that policy making activities should be delegated to existing organizations rather than setting up new bodies.

AU/IBAR solicited EU for a one year no cost extension of FITCA and the case for FITCA Phase II is being promoted.

Five countries surrounding the Okavango region are being lobbied at ministerial level by AU to coordinate T&T activities, and a meeting had been convened in August 2003 to further discuss the issue.

4. FITCA: report on regional progress and future work – H.M. Solomon

An overview of FITCA activities was presented, with particular reference to national priorities, surveys, specific field intervention actions and research activities. In some countries, like Sudan and Burundi, FITCA could not operate due to civil insecurity.

FITCA had provided assistance to some East African countries, but also countries in West and Central Africa, in the formulation of T&T projects, and considering T&T activities as an entry point to rural development in a broader context. In this regard, coordination meetings at ministerial level were held to promote harmonization of national and regional priorities. An important aspect of FITCA activities concerned training of private veterinary practices and financial monitoring of trainees’ activities at regional level. Community based tsetse control activities included training of 1 500 farmers on the use of targets and tsetse monitoring. These community based activities resulted in the reduction of 95 percent in fly abundance. In addition, 300 community-managed crush pens had been constructed. These centre act as focal points for a range of agricultural interventions, including cattle spraying. Over 10 000 farmers had been trained in a range of agricultural practices other than tsetse related ones. Zero grazing cattle pens with insecticide (pyrethroids) impregnated nets continue to be implemented. As a result of the reduction in T&T challenge, farmers have now started investing in improved stock. Other activities concerned trials to chemically reduce the reproductive capacity of *Glossina fuscipes fuscipes*.

During a previous workshop, four major areas for future activities had been identified:

- (i) strengthen community based organizations;
- (ii) enable private sector providers;
- (iii) strengthen public service providers; and
- (iv) enhance management and coordination of all activities.

A point of discussion concerned the sustainability of the increased milk production resulting from T&T control and the use of improved animals. It was argued that the high demand would render milk production a remunerable and, thus, sustainable, activity. In this respect, it should be mentioned that transhumance does not occur in the area where “zero grazing cattle pens with insecticide (pyrethroids) impregnated nets” have been introduced. This makes easier to access to farmers. On the other hand, in large parts of West Africa where transhumance is a common livestock management practice, it may constitute an obstacle for the introduction and adoption of “zero grazing pens – impregnated nets”.

Although significant resources had been allocated to sleeping sickness in north-eastern Uganda, it was stressed the necessity for an improved coordination and integration of actions dealing with animal trypanosomiasis and sleeping sickness within FITCA project area.

5. Report from IAEA – U. Feldmann

The work of the Agency concentrated on research, method development, technical cooperation field projects and normative issues.

With regards to research and method development, work on the mating compatibility and competitiveness of mass-reared tsetse strains with wild target strains of the same tsetse species was pursued by laboratory mating studies and field cage behavioural tests. The trials confirmed the suitability of sterile males of several available mass-rearing adapted strains for use against wild target strains.

In collaboration with FAO and ERGO and with the contribution of colleagues in T&T affected countries, improved tsetse presence/absence risk prediction maps were developed for different areas. DNA libraries of the most important tsetse species were acquired and, partially under a Coordinated Research Project on tsetse genetics, techniques were developed for field application of tsetse population genetic studies. Combined with the risk prediction maps (to be further improved), these genetic studies are expected to generate a better data base for strategic planning of field intervention projects.

The audience was informed that progress had been made on the development of the chilled adult release system for sterile tsetse males. The work included low-temperature incubation experiments to identify a sequence of procedures for male handling from fly emergence to eventual aerial release. Meanwhile, a prototype of a metering device is available, which will permit the automated aerial release of predetermined numbers of sterile males over specified flight lines.

Regarding technical cooperation projects, one regional IAEA-TC project and, on specific requests from Member States, eight national TC projects (Botswana, Burkina Faso, Ethiopia, Kenya, Mali, South Africa, Tanzania and Uganda) were implemented. The regional project provided support to PATTEC, contributed to awareness and commitment generation towards intervention against the T&T problem, fostered sub-regional cooperation on transboundary measures on T&T and funded regional training courses. The national projects are at different stages of planning and implementation of area wide integrated T&T intervention operations. Remarkable progress on or relevant to project

activities was achieved over the past year. This includes a draft of a design of a tsetse mass-rearing facility in Burkina Faso, close and useful interaction of project staff and communities in joint efforts against T&T and good progress towards the construction of tsetse mass-rearing facility at Kaliti, Ethiopia. Also, notable is the collation of essential field data in Mali for eventual delineation of intervention area along watershed as assumed (temporary) barriers that separate river basins.

With regard to normative issues and assistance to PATTEC and Member States in generating awareness and fund raising, several steps were taken. In addition to the already mentioned (by FAO and PAAT) collaborative work, conducted with AU-IBAR, FAO and WHO and along the PAAT-PATTEC harmonization process for joint international action, support was generated for T&T intervention campaigns in areas with high potential for sustainable agriculture and rural development. Furthermore, two issues of the Insect Pest Control Newsletter (IPCN) are published every year. The IPCN announces the upcoming events (training courses, seminars, etc.) and contains relevant summary information of the work carried out under the FAO/IAEA Programme in the field of pest insect control. Notable also, is a consultation meeting held in Vienna in late August 2003 on the development of internationally agreed procedures for declaring zones free of the tsetse and trypanosomiasis problem.

In consultation with AU-IBAR, FAO, PATTEC and WHO, IAEA submitted a proposal to the United Nations Fund for International Partnership (UNFIP) entitled “Coordinated, Phased Programme for the Creation of Tsetse Free Zones in Africa: A Prerequisite to Enhance Agricultural Development and to Control Human African Trypanosomiasis”. The proposal was positively received by the UNFIP and it is envisaged that the sum of US\$300,000 will be made available to IAEA. The project is intended to generate additional technical information for strategic planning of integrated area-wide T&T intervention operations and, in close collaboration with Member States and other partners (especially FAO, WHO, PAAT and PATTEC), to increase awareness of the T&T problem among potential donors for agreed priority intervention areas (e.g. Southern Rift Valley of Ethiopia). Additional information is available on the IPCN and on IAEA website.

6. Report from WHO – J. Jannin

Human African trypanosomiasis (HAT) can be seen as one of the neglected diseases affecting marginalised populations. Consequently, it is considered that one of the main challenges to solving the problem is to create basic conditions that would enable political decisions to apply intervention strategies in countries where endemic foci are present. In addition, in order to effectively combat the disease, a minimum level of capacity is required in affected countries for the application of new and more efficient tools. Particularly important is a bottom-up integrated approach, where the implementation of improved HAT screening and treatment activities can contribute to a general health care system, until countries independently perform such functions. Three main objectives for solving the problem of neglected diseases, including HAT are:

- (i) enabling the targeted populations to meet the requirements of health capacity;
- (ii) enabling of existing health capacities to absorb new tasks; and

- (iii) ensuring of specific health care delivery that is closer to the concerned populations.

WHO is providing support to strengthen control programmes towards sustainability, by developing the concept of inter-country teams aiming to a complete assessment of the epidemiological situation and the initiation of activities targeting disease elimination. WHO also gives support to national programmes to enable them to attain a level of efficiency that would arouse the interest of donors. In this regard, three strategies are adopted:

- (i) increased control and surveillance for a rapid implementation of disease elimination programme;
- (ii) sustained control and surveillance activities as a follow up to epidemiological assessment; and
- (iii) building of regional teams to enable to launch disease elimination process.

These strategies are of high significance in countries where HAT problem is widespread, i.e. Angola, Democratic Republic of Congo and Sudan. In Sudan, in particular, WHO assist the national authorities, at ministerial level, in the coordination of NGOs, and the establishment of national structures to combat HAT.

Drugs for treatment of HAT are now free of charge for all Africa and WHO is working in order to ensure the provision of an effective drug delivery programme that would guarantee full access to treatment by affected populations. A major problem in this regard is to access to mobile/displaced populations, like refugees, and lack of security due to civil disturbances prevent regular medical monitoring.

WHO involvement in HAT research is increasing, mainly through its “Treatment and Drug Resistance Network”. One of the main goals of this initiative is to enable a large network of control structures (including reference treatment centres) to host research projects for clinical trials or validation of diagnosis tests. DNDi (Drug for Neglected Disease initiative) participates in this activity.

An initiative for the development of new diagnostic tools had seen the light and the first achievement is the creation of a TDR/WHO Product Development Team in charge of developing new tools. The involvement of a private diagnostic manufacturer should be considered.

A large number of HAT cases remain undetected; there would be a large number of undetected deaths. This situation shows that the calculation of DALYs is grossly underestimated. A working group was created by WHO to refine the calculation of DALYs. An important output would be the development of a knowledge base on the dual burden of poverty and disease which would form the basis for the inclusion of sleeping sickness into PRSPs.

A WHO-ICIPE concerted action, with the participation of FAO, is being developed in Chad to eliminate both human and animal disease, using screening, treatment, vector control and to increase agricultural production.

The 56th World Health Assembly (WHA), May 2003, adopted a resolution to support PATTEC. Member States urged WHO to prepare a new resolution for the 57th WHA to emphasize their role for the elimination of sleeping sickness, using mainly systematic screening and treatment.

7. Tsetse and trypanosomiasis in the Ethiopian Southern Rift Valley – A concept note for field programme – A. Temesgen

The T&T situation in the Southern Rift Valley (SRV) of Ethiopia was outlined. In this area, the presence of tsetse fly denies access to lower fertile valleys which causes over-stocking and overuse of highlands and heavy population pressure. Long term efforts had been deployed to reduce T&T pressure through the use of prophylactic drug treatments with partial success. Government has therefore selected to support a pilot project aiming at the elimination of the vector and the disease. A ten year programme was set up in 1997 with the objective of reducing human population pressure on highlands, promoting agriculture in the lowlands with a view to reduce poverty and increase rural livelihoods. The Government has committed to this programme US\$3 million.

Following a workshop, held in July 2003 in FAO HQs, a draft concept note was developed and a refined version presented during the PAG meeting. Some 10,500 km² of an overall 25,000 km² area were selected. The area is isolated from adjacent infested areas, contains only one fly species (i.e. *G. pallidipes*) and has high agricultural potential. In addition, if SIT has to be used as a finishing off method for tsetse and disease elimination from the area, the Government, with a partial support of IAEA, has engaged in the construction of a tsetse rearing facility (which is in progress). Baseline data collection, fly suppression activities and baseline monitoring are now underway. However, additional work needs to be carried out to achieve the ultimate goal, i.e. increased agricultural production. A total amount of approximately US\$12.5 million has been estimated. This amount will allow, in general terms, to:

- (i) complement existing data, particularly socio-economic and environmental data;
- (ii) develop the necessary human resources;
- (iii) reduce disease pressure;
- (iv) ensure appropriate use of natural resources and planning land use and land tenure; and
- (v) promote crop and livestock farming.

Chances of success of this intervention are:

- (i) government and local communities are committed to the current T&T activities in the area;
- (ii) heavy human pressure in the surrounding highlands could take up suitable land in the valley for agricultural and livestock production provided that T&T threat is removed;
- (iii) only one species of tsetse is present;
- (iv) the area is confined in terms of tsetse population isolation, thus substantially reducing the risk of re-invasion after intervention; and

- (v) the huge potential for livestock and crop production and consequent poverty reduction in the selected area.

This pilot intervention will serve as a model for future projects. The Concept Note will be presented by the Ethiopian Government to donors during the 8th PAAT Programme Committee meeting, foreseen in March-April 2004 in FAO HQs.

This presentation was complemented with a template for T&T integrated intervention which considers four linked components, i.e. socio-economics, land use-land tenure and natural resources management, training and information, agricultural production and infrastructures. It was suggested to include in the template a fifth component dealing with institutional support.

The PAG endorsed the concept note and required to revise the budget which appears modest in relation to the size of the area and the various activities that need to be conducted.

8. Tsetse and trypanosomiasis in the “cotton belt” zone of Burkina Faso and Mali: an outline – S. Maiga, I. Tamboura

Burkina Faso and Mali have engaged in a transboundary T&T intervention project. Administrative and technical arrangements had been put in place to ensure the smooth implementation of activities. In this regard, progress in Mali is relatively more advanced. For example, with an active participation of rural communities, insecticide impregnated targets drastically reduced (about 98 percent) the tsetse populations in operation areas. An artificial barrier system had been put in place to avoid re-invasion.

Concern was expressed about the use, maintenance, and consequently efficiency or sustainability of artificial barriers. Stringent measures need to be applied to ensure that barrier systems do not collapse. Additional comments concerned the relevance to include in the current project other tsetse infested areas, extending to other neighbouring countries. Prior to this step, it is necessary to identify areas in Mali having a maximum of natural barriers. In this regard, it appears appropriate to carry out a survey aiming at assessing re-invasion risk level and degree of isolation of targeted tsetse population. A further point of discussion was the massive use of insecticide to protect cotton cultivation in the area. This practice may affect (or have affected) tsetse distribution, as was the case in Kenya when the collapse of cotton growing in the 1960s was followed by an expansion in fly populations. In the “cotton belt” zone of Mali, the foreseen expansion and intensification of livestock-agricultural production could assist active tsetse control, and render initial barriers only a temporary necessity.

9. A proposal for harmonization of sampling tsetse populations – U. Feldmann, W. Wint, G. Chizyuka

Methods used to produce new fly distribution maps were outlined and progress to date described. Draft distribution maps at one km resolution have so far been produced for the major fly species in six regions or countries: West Africa, Southern Africa, Ethiopia, Kenya, Western Somalia, Tanzania and Uganda. These maps have been produced for use

in the field to target further field surveys which would provide information needed to refine initial drafts.

The ground validation exercise would be standardized, using sample transects for all regions to be studied with heterogeneous fly distributions. Sample would be taken every 30-50 km. For areas with more homogeneous fly distributions, such as West Africa, grid sampling (50 x 50 km²) would be more appropriate.

In addition, there is a need to establish criteria for defining fly and disease free status. A meeting of consultants organized by FAO/IAEA suggested a three stage approach with pre, during and post tsetse intervention phases. Monitoring should be carried out in all phases, but most intensively for two years in the final post intervention phase. In this regard, fly monitoring methods would be standardized for season, trap type and attractant, trap density and placing and duration of the exercise, based on statistical protocols on the number of traps needed and duration of trapping efforts within a particular area to establish absence or eradication of flies.

Necessary funds are being identified for the implementation of the fly transect/grid exercise. Collaborators need to be selected to conduct validation sampling. FAO, through its Liaison Officers Network for T&T, could be an ideal partner.

It was suggested that PAAT should set up a committee to set criteria for the declaration of tsetse and trypanosomiasis free zone. It was proposed that monitoring protocols should be independent from the type of tsetse intervention, and that the declaration of tsetse free zone takes several steps/phases, including “provisional freedom”.

10. Mapping the benefits: first steps in developing a new decision tool for tsetse and trypanosomiasis intervention – W. Wint, A. Shaw, G. Hendrickx

A study has been initiated to investigate the feasibility of linking quantitative economic variables to a Geographic Information System (GIS) spatial framework in order to provide new insights and reinforce the decision-making process for T&T interventions. The first of the work tackled Benin, Ghana and Togo. Initial data have been collected for parts of Burkina Faso and Mali and will be analysed in the second phase. A range of standardized livestock production and price data have been collated at national, province and district level from each country, together with the most recent livestock, cropping and disease information. These have been amalgamated with corresponding data layers from the PAAT Information System and a new distribution map of trypanotolerant and susceptible cattle breeds has been produced for the study area. Existing information on the disease impact on cattle production parameters has been incorporated in herd models.

These were used to estimate the potential benefits of T&T interventions for each breed and included not only the outputs of milk, meat and draught, but also a value for the extra cattle present due to the absence of trypanosomiasis. The benefits have been expressed as dollars per head of stock currently present and can thus be applied to the breed density maps produced to provide a map of estimated benefits per square km, 20 years after disease removal.

Even in the presence of the disease, cattle populations in the study area are thought to be increasing, which will affect the downstream livestock distribution. However, these growth rates increase in absence of trypanosomiasis, so that populations at the end of the period are larger. The elements of cattle population growth have therefore been mapped separately and have then been combined in several sequential stages:

- (i) the non removal growth rates per initial animal are applied to current density maps to give first estimates of livestock growth in the absence of T&T intervention. When added to the existing population density, the livestock growth maps provide an estimate of the cattle population after 20 years, assuming no T&T intervention;
- (ii) this first output produces densities in population foci that significantly exceed likely carrying capacities, and must therefore be adjusted either by reducing calculated densities (equivalent to increasing offtake), or by “exporting” animals from the high concentration areas to surrounding less heavily stocked regions. The second of these possibilities has been adopted here;
- (iii) to the redistributed populations, are added the additional calculated increase in cattle due to fly removal; and
- (iv) redistribute these once again to surrounding areas if the growth leads to exceeding the nominal carrying capacity. These latter animals are also likely to represent a degree of dollar benefit to those areas into which they are imported, though less than those associated with the initial benefits accruing from disease removal, as they will be imported in the final years of the 20 year period being considered. This incremental benefit can be derived from the number of animals imported to new areas, and their value per head. A final benefit map is then produced by adding the two components.

A number of refinements are being considered to improve the method described. The most important will be producing maps for additional breed/productions system combinations. Data for Burkina Faso and Mali have already been collected; these will be analysed and mapped using the methodology described above. At the same time another breed/production system will be defined, based on crossbred cattle and very high use of work oxen as for application to the Burkina Faso and Mali area. The definition of further production systems to mesh with existing farming system data is a further step that needs to be considered in the light of how many systems it is feasible to model or can be supported by data on the effects of the disease on livestock productivity. As mentioned above, the breed maps at the moment are based on the predominant breed, rather than allocating proportions to each breed, accordingly producing proportionate breed maps is envisaged.

As the outputs are provided for each map pixel, the benefit values could be readily summed for any selected areas of interest, and if compared with potential costs, could produce cost-benefit ratio for any defined area. This would, however, require a similar exercise to the current one of combining economic cost models with spatial data to be carried out first. The regions which show net benefits at calculated cost levels could then be mapped, as could the benefit-cost ratios for the various intervention options. If successful, it may even be feasible to test this approach for other livestock diseases which are endemic over large geographical areas.

It was suggested that the technical approach might be improved if the environmental costs of the expanding populations were to be incorporated.

11. The new phase of ICPTV – M. Eisler, P. Van den Bossche, S. de la Rocque

A brief overview of ICPTV Phase I was provided. A wide range of partners participated in this phase during which eight workshops were held within the three fields of action. Proceedings and recommendations of workshops were summarised in the ICPTV Newsletter. The last newsletter (number 8) was published recently.

Proposals for the second phase plus two further ICPTV linked proposals, submitted to the EC for funding under EU FP6 INCO-DEV programme, phase were presented. The proposals constitute a “thematic network”. They consist of two STREPs (Strategic Targeted Research Programmes) and one Coordinated Action (CA). The first STREP focuses on livestock trypanosomiasis. It aims at establishing the effect of a changing environment on the epidemiology of the disease and its impact on disease control. This will be achieved by collecting historical information, assessing environmental determinants and studying the trypanosomiasis epidemiology. The project has a socio-economic component and will establish the impact and adoption of different type of control interventions under different epidemiological circumstances. The project will be coordinated by the Centre for Tropical Veterinary Medicine (CTVM), Edinburgh. The second STREP focuses on tsetse. Its main objective is to establish the effect of habitat fragmentation on the survival of tsetse populations and tsetse population isolation. Through parameters such as fly size, age distribution and genetic diversity the tsetse population’s vulnerability and level of isolation will be determined and priority areas for control will be identified. The outcomes of the two STREPs are likely to contribute greatly to important questions with respect to strategic decision that have to be made in the control of tsetse-transmitted trypanosomiasis. All these activities of the two STREPs are very much complementary of PAAT strategy for T&T interventions.

The second phase of ICPTV will be coordinated by the Veterinary Department of the Institute of Tropical Medicine (ITM), Antwerp. This phase will be similar in scope as the first phase. It will concentrate on dissemination of information obtained through research conducted under the proposed STREPs or elsewhere. This will be achieved through workshops, a website, leaflets and scientific exchanges. Special attention will be paid to the changing environment and how those changes may affect tsetse and trypanosomiasis control strategies. During the four years of the second phase, a total of eight workshops will be organized. It is proposed that four workshops will focus on determining the changes in the environment and their effect on trypanosomiasis control. The other four workshops will focus on the scientific progress (e.g. tsetse genomics, modelling, etc.) and its potential impact on trypanosomiasis control. The ICPTV will continue to support the Research and Development module of PAAT. To improve link between PAAT and ICPTV, the PAAT Coordinator will be a member of the Steering Committee of ICPTV.

The discussion stressed the point on the necessity to enhance coordination among EU funded programmes but also with other national African T&T initiatives.

The audience supported the second phase of ICPTV and the continued collaboration with PAAT.

12. Report on the progress in the implementation of PATTEC initiative – J. Kabayo

The PATTEC's history since 2000 was outlined. Emphasized was the eradication of tsetse fly using appropriate methods. This will be achieved through a phased approach with discrete packages and specific aims. The plan of action of PATTEC was presented as follows:

- (i) identification of areas with isolated tsetse populations;
- (ii) tackle each area one at a time;
- (iii) apply integrated control methods;
- (iv) produce clear plans and deadlines;
- (v) focus on regional operations; and
- (vi) have a long-term goal but aim at short-term success.

PATTEC's role is to catalyse actions, to coordinate and mediate actions between countries, and to synergise interventions and support training and capacity building. Since the last PAG meeting, the PATTEC coordinator attended meetings with ECOWAS to discuss transboundary operations. Agreements were made with ADB, ESTC and COMESA. Extensive cooperation agreement exist with 22 countries, in all four sub-Saharan regions. Each country needs to define activities, mobilize funds by preparing bankable projects, ensure appropriate exploitation of newly tsetse cleared land, promote surveillance, disseminate information to politicians, and persuade countries to include T&T in annual budgets and PRSPs.

A GIS training course was organized and a newsletter and website (part of the AU website) were launched.

The PATTEC Coordinator highlighted the normative and advisory role provided by PAAT on all aspects of the implementation of the PATTEC initiative and, *inter alia*, on the identification of research needs and in the preparation of projects.

The recognition of PAAT as an advisory body for PATTEC was appreciated by the audience.

13. Reports on research programme from CIRDES, ICIPE, ITC, KETRI, and TDR/WHO – I. Sidibe, J. Ndung'u, R. Saini, O. Akinbamijo, D. Kioy

CIRDES – I. Sidibe

CIRDES has a regional mandate covering Burkina Faso, Benin, Côte d'Ivoire, Ghana, Mali and Togo. Research programmes focus on improved diagnosis, epidemiology, tsetse rearing, chemioresistance and socio-economics. Most of the research activities are supported by EU through the PROCORDEL programme.

An overview of T&T situation and control operations in Burkina Faso, Côte d'Ivoire and Mali was presented.

In Burkina Faso, about 40 percent of the country is tsetse infested. Five species (three major) are present. For 30 years, flies have been retreating from the south east. *G. morsitans* is usually less prevalent. Trypanosomiasis prevalence may be as high as 40 percent in livestock and up to 15 percent in wild animals. Some tsetse control operations have been implemented upon farmers' demand.

Mali is infested with four tsetse species (three important ones). Trypanosomiasis prevalence in livestock is about 10 percent. *G. morsitans submorsitans* is in regression with a high density in the south (Madina Diassa area). In this zone trypanotolerant cattle breeds are prevalent.

The whole of Côte d'Ivoire is infested with tsetse. A total of ten species is present of which five are of major importance. In certain areas tsetse density has been substantially reduced following control operations resulting in a significant reduction in disease prevalence (current prevalence estimated at 3 percent). Outside control areas prevalence ranges between 35 to 70 percent.

Future activities will aim at evaluating the farmers' perspective and perception with respect to trypanosomiasis control, developing simple field diagnostic tools, method promoting rational drug use, evaluating the development of drug resistance, assessing the property of trypanocidal activities of certain plants, integrating tsetse and tick control, and improving the transfer of technology.

ICIPE – R. Saini

ICIPE's perspective on a series of researchable issues for practical research to improve T&T interventions were presented. Three main areas can be distinguished:

- (i) the development of improved intervention tools;
- (ii) the design of integrated disease and vector management schemes; and
- (iii) capacity building.

Improved tools for interventions – proposed projects include research in attractants and repellents, improve baits for riverine and savannah species of tsetse, multispecies suppression studies, barrier systems (push/pull method), improved life bait systems and their impact on enzootic stability of some tick-borne diseases and genetically modified refractory vector to replace competent vectors.

Design of integrated disease and vector management schemes. This research area will focus on strategic use of drugs and insecticides, standardization of methodological approaches, improve information on fly population dynamics and dispersal to improve bait technologies. Finally, the need is identified to refine and adapt new strategies for incorporation into extension packages for different farming systems.

There is a need for more trained manpower and educational material.

ITC – O. Akinbamijo

ITC has a regional mandate, covering Gambia, Guinea, Guinea Bissau, Liberia, Senegal and Sierra Leone with research collaborations inside and outside its mandate region

ITC recognizes that T&T continues to constitute a major problem. There is no prospect for vaccine and drug resistance is on the increase. Considering these issues, trypanotolerance has a major potential.

The Centre has four major impact areas:

- (i) the production of tsetse distribution maps;
- (ii) the assessment of trypanocidal drug efficiency;
- (iii) the breeding schemes of trypanotolerant livestock; and
- (iv) the genetic characterization of small ruminants.

Four pillars are identified to ensure the ITC's action:

- (i) improve local resources;
- (ii) introduce innovative actions (crossbred);
- (iii) collaboration and networking; and
- (iv) training.

KETRI – J. Ndung'u

A list of factors that may hinder the implementation of currently available trypanosomiasis control methods was presented. A major one is the absence or inadequacy of policies. In addition, poor national capacity, poor transferability of technologies, science-driven technology, poor understanding of the concept of community participation, long duration of the intervention and poor coordination are contributing factors.

The following solutions were proposed:

- (i) development of national policies;
- (ii) improve linkages between donors and Governments, institutions, extension services, private sector and communities;
- (iii) priority setting using decision support tools and adequate information;
- (iv) sufficient resource allocation;
- (v) a balance between basic and applied research;
- (vi) increased involvement of stakeholders; and
- (vii) appropriate research at all stages.

In this context, it was stressed the need for competitive projects that are incorporated in the poverty reduction plans. In addition, sustainability can only be achieved when the right stakeholders are involved in project implementation and activities. It was suggested that the next PAG meeting should consider sustainability of intervention in more detail.

WHO/TDR – D. Kioy

TDR's priorities in support of research on African trypanosomiasis were presented. The TDR strategy 2000 – 2005 puts emphasis on poverty alleviation and inequity, fostering economic development and increasing research self-reliance. Because of numerous problems currently encountered in drug use, the strategic plan for the control of HAT focuses on the development of new tools rather than implementation. Furthermore, capacity building continues to be an area of particular interest. Unfortunately, declining financial resources impedes the implementation of several of the TDR's training objectives.

Trypanosomiasis, together with nine further diseases, is listed among the so-called neglected diseases. Four activity areas are addressed by TDR. These are basic research, product research and development, implementation research and research capability strengthening. A strategic direction has been developed for each of the neglected diseases. Depending on several priority setting criteria (e.g. disease burden, persistence of disease burden, ongoing research and development), three categories are defined. Trypanosomiasis is ranked as category 1 disease or an "emerging and uncontrolled disease".

A list of research projects was presented. It included bioinformatics and applied genomics, socio-economic impact of HAT, the effects of policy changes on health care delivery, and factors influencing community participation. Other research areas comprise the development of new drugs, the improvement of diagnostic tools, and trials using different intervention methods for vector and disease control.

9th PAG MEETING

Pretoria, South Africa

24-25 September 2003

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9th PAG MEETING
Pretoria, South Africa
24-25 September 2003
TENTATIVE AGENDA

Opening address and introduction (Official from South Africa and A. Ilemobade)

1. Report of the last PAG (A. Ilemobade)
2. Report of the PAAT Secretariat and FAO/PAAT activities from FAO (R.C. Mattioli)
3. Report from FAO Regional Office, Accra (G. Chizyuka)
4. Report from AU/IBAR (J. Musiime)
5. Report from IAEA (U. Feldmann)
6. Report from WHO (J. Jannin)
7. Report on advancement on PAAT-PATTEC harmonization (A. Ilemobade)
8. FITCA: regional progress report and future work (H.M. Solomon) and status of work and achievements of FITCA – Kenya (B. Bauer)
9. Tsetse & trypanosomiasis (T&T) in the Ethiopia Southern Rift Valley – A concept note for field programme (A. Temesgen)
10. T&T in the cotton belt of Burkina Faso-Mali: outline of field programme (I. Tamboura and S. Maiga)
11. A proposal for harmonization of sampling national-regional tsetse population (U. Feldmann and G. Chizyuka)
12. Mapping the benefits: first steps in developing a new decision tool for tsetse and trypanosomiasis interventions (W. Wint)
13. Prospects for practical research to increase the efficiency of T&T intervention operation (K. Agyemang, E. Camus, J. Ndung'u, R. Saini, I. Sidibe)
14. Presentation of the new phase of ICPTV (P. van den Bossche)

15. How PAAT can better assist T&T affected countries (Moderators A. Ilemobade and R.C. Mattioli)
16. Any other business
17. Closing

9th PAG MEETING

Pretoria, South Africa

24-25 September 2003

TIMETABLE

Wednesday, 24 September 2003

08:30 - 09:15 Registration

09:15 - 09:30 Opening address and Welcome

09:30 - 09:45 Break

09:45 – 10:00 Introduction by Chairman, adoption of agenda and appointment of Rapporteurs

10:00 – 10:30 Adoption of report of last PAG meeting (A.A. Ilemobade), and report of PAAT Secretariat and FAO/PAAT activities (R.C. Mattioli)

10:30 – 10:40 Report from FAO Regional Office, Accra (G. Chizyuka)

10:40 – 10:55 Report from AU/IBAR (J. Musiime)

10:55 – 11:10 Report from IAEA (U. Feldmann)

11:10 – 11:25 Report from WHO (J. Jannin)

11:25 – 11:40 Report on advancement on PAAT-PATTEC harmonization (A.A. Ilemobade)

11:40 – 12:00 FITCA: regional progress and future work (H.M. Solomon, and status of work and achievements of FITCA – Kenya (B. Bauer)

12:00 – 13:30 Lunch

13:30 – 14:00 Tsetse & trypanosomiasis (T&T) in the Ethiopian Southern Rift Valley – A concept note for field programme (A. Temesgen)

14:00 – 14:30 Discussion

14:30 – 15:30 T&T in the cotton belt of Burkina Faso-Mali: outline of field programme (I. Tamboura and S. Maiga)

15:30 – 15:45 Break

15:45 – 16:30 Discussion

16:30 – 16:50 A proposal for harmonization of sampling national-regional tsetse population (U. Feldmann and G. Chizyuka)

16:50 – 17:10 Discussion

17:10 – 17:45 Preliminary conclusions and recommendations of day 1

19:00 – 20:30 Reception

Thursday, 25 September 2003

09:00 – 09:30 Mapping the benefits: first steps in developing a new decision tool for tsetse and trypanosomiasis interventions (W. Wint)

09:30 – 10:15 Prospects for practical research to increase the efficiency of T&T intervention operation (S. de la Rocque, J. Ndung'u, R. Saini, I. Sidibe)

10:15 – 10:45 Break

10:45 – 11:00 Presentation of the new phase of ICPTV (P. Van den Bossche)

11:00 – 12:00 How PAAT can better assist T&T affected countries (Moderators A.A. Ilemobade and R.C. Mattioli)

12:00 – 14:00 Lunch

14:00 – 15:30 Discussion – How PAAT can better assist T&T affected countries (Moderators A.A. Ilemobade and R.C. Mattioli)

15:30 – 16:00 Break

16:00 – 16:30 Any other business

16:30 – 17:30 Conclusions and recommendations

17:30 – 17:45 Next meeting; Closing